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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Scott R. Pundsack
Bereskin & Parr
Box 401
40 King Street West
Toronto, ON M5H 3Y2
CANADA

EXAMINER

MENON, KRISHNAN S

ART UNIT PAPER NUMBER

1723

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,247

Applicant(s)

COTE ET AL.

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This is a first action on an RCE. Claims 26-36 are pending.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 26 – 34 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 6,303,035. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims recite limitations pertaining to a process of separating solids from a feed water stream with a submerged membrane (in a tank) with periodic cleaning by back-washing with permeate and a cleaning chemical (an oxidant), with draining of the retentate from the tank.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1723

Claims 26-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al (US 5,403,479).

Smith (479) teaches a process of filtering water containing solids by immersing a membrane in a tank containing the water and providing a trans-membrane pressure for the filtration (Fig 2,7; col 15 line 63-col 16 line 10), with the permeate side connected to permeate outlet (line 22, and tank 27, fig 2), the membrane aerated (col 16 lines 20-25), backwashing the membrane (col 15 table, lines 16-47, col 18 lines 13-29) periodically by a select cleaning fluid for a select period (col 11 lines 22-61).

Smith discusses about draining the tank during cleaning as in claim 26, but does not advocate draining the tank during the cleaning process as in claim 26 (col 10 lines 64-68, col 11 lines 22-30). However, a reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. The question whether a reference "teaches away" from the invention is inapplicable to an anticipation analysis. *Celeritas Technologies Ltd. v Rockwell International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998). Also please note "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments" (In re *Suzi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)).

Re when to drain the tank, the 'Markhush group' claim language covers all the possibilities there are: before, during or after the cleaning step, with or without overlaps, and therefore, is anticipated by Smith.

Re the newly added limitations in Claim 26: '... retentate in the tank ...' is inherent; what remains in the tank is 'retentate' after 'permeate' is removed from the feed by the process.

Backwashing is done after the permeation step (see col 11 lines 22-61).

Claims 27-30:

Art Unit: 1723

The cleaning is between once a day and once a cycle (see fig 6; col 13 lines 50-57) as in instant claim 27. The cleaning is carried out to maintain an acceptable permeability of the membrane as in instant claim 28 (col 13 lines 50 – 57, col 18 lines 5-12). The sum of the products of chemical concentration and duration of cleaning could be between 5,000 and 10,000 min.mg/L or equivalent for another cleaning chemical (col 11 lines 30-35: time less than an Hr, sufficient to diffuse enough cleaning solution ... ; table line 9: NaOCl at 100 ppm, col 15 lines 34-36: cleaning solution at 10 ppm; these provide the CT values within the range claimed) as in instant claim 29 and 30.

Re the newly added limitations in claims 28-30:

Claim 28: the cleaning steps from time to time is to increase and reduce the rate of decline of flux in Smith (col 10 lines 64-68, col 11 lines 22-30)

Claims 29 and 30: the min.mg/L value “per week over a period of at least a month”: Smith does not limit the cleaning process for less than a month.

New claims:

Claim 31: recovery cleaning at least one month apart: result-effective variable: In re Boesch.

Claim 32: permeate is used as drinking water: intended use of the product made: Smith ref teaches purifying “ground water” in col 20 lines 35-43. Ground water is well known as a source of drinking water. [Also, please note that a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)]

Claims 33-35: cleaning at regular intervals, mixing cleaning chemicals in flowing water in permeate side: see abstract and figures of Smith. Re mixing cleaning chemical in flowing water,

Smith teaches flowing water containing the cleaning chemical, the cleaning chemical being mixed in the water in a feed tank, which is equivalent. Re backwashing with permeate after backwashing with cleaning chemical, see col 12 lines 56-68.

Claim 36: Membrane is hollow fiber in smith – see abstract.

Response to Amendment

The declaration under 37 CFR 1.132 filed 7/16/03 is insufficient to overcome the rejection of the instant claims based upon Smith ref as set forth in the last Office action because the rejection is anticipatory, based on data provided in the ref without particularly depending on figures 4 and 6. [Also please note that Ddiscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Aller, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955). In the instant claims, even if the Smith ref did not provide CT values within the range as claimed, the claims would have been held obvious in light of this case law. The instant invention used water samples with turbidity less than 15 ntu and total organic carbon (TOC) less than 8 mg/L (ppm) for the testing in the examples. It would be well within the knowledge of one skilled in the art that the cleaning chemical concentrations and/or the frequency of cleaning would have been significantly different had the water been of significantly higher TOC and turbidity. The invention does not show the effect of the quantity of water processed, the nature of the contaminants, the process through-put, the degree of contamination in the water and the degree of accumulation of the foulants on the membranes on the cleaning process. Smith ref teaches cleaning 'dirty water' and in one example, 'ground water', which may have a different level of contamination

Art Unit: 1723

requiring a different level of cleaning chemicals. Such factors would form the basis for the optimization].

Response to Arguments

Applicant's arguments filed 7/16/03 have been fully considered but they are not persuasive.

The argument whether the Smith ref makes draining the tank obvious or not is addressed by changing the rejection of the claim. Draining the tank is anticipated by the reference. Rest of the arguments about claim 26 is addressed in the rejection.

Re argument that Smith ref does not provide support for the proposition of draining the tank as being commonly practiced, please refer to col 1 lines 5-20: states the method of "without draining" as an improvement, which implies that draining is a commonly used procedure. Also see col 4 lines 61-68, col 5 lines 24-36, col 7 lines 8-29, col 8 lines 57-64, to suggest a few locations in the ref where prior art teachings of draining is discussed.

Re the argument that Smith ref does not merely disclose examples and preferred embodiments, but explicitly teaches against draining the tank: again, argument of negative teaching is not applicable to anticipation analysis as stated in the rejection (*Celeritas Technologies Ltd. v Rockwell International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998)).

Re the argument that the [prior] office action does not make an anticipation rejection and that the no anticipation rejection is possible: The Smith ref teaches draining the tank, albeit negatively, which is anticipatory. These are clarified in the new rejection language of this office action.

Rest of the arguments are about the details of cleaning solution concentration and time intervals, which are addressed in the new rejection language.

Art Unit: 1723


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon
Patent Examiner


JOSEPH DRODGE
PRIMARY EXAMINER